GEOGRAPHIC SCHOOL BULLETINS

THE NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON 6, D.C.

VOLUME XXXVI, NUMBER 28, MAY 5, 1958 . . . *To Know This World, Its Life*

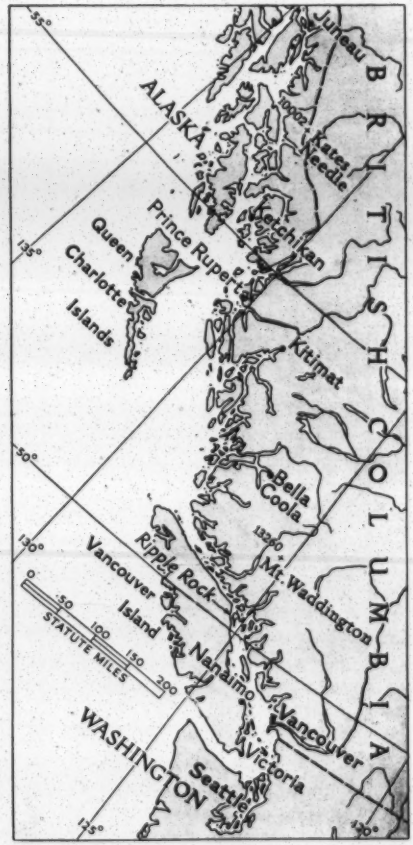
NATIONAL GEOGRAPHIC PHOTOGRAPHER ROBERT F. SISSON

CHESAPEAKE Bay sailors race historic log canoe developed from Indian craft. (See page 341)

It's Almost That Time of Year—

VACATION IDEAS

- Inside Passage to Alaska
- Sailing Starts Young in the East
- Roan Mountain—Blossoms in the Sky
- Petrified Forest
- Paul Bunyan's Minnesota



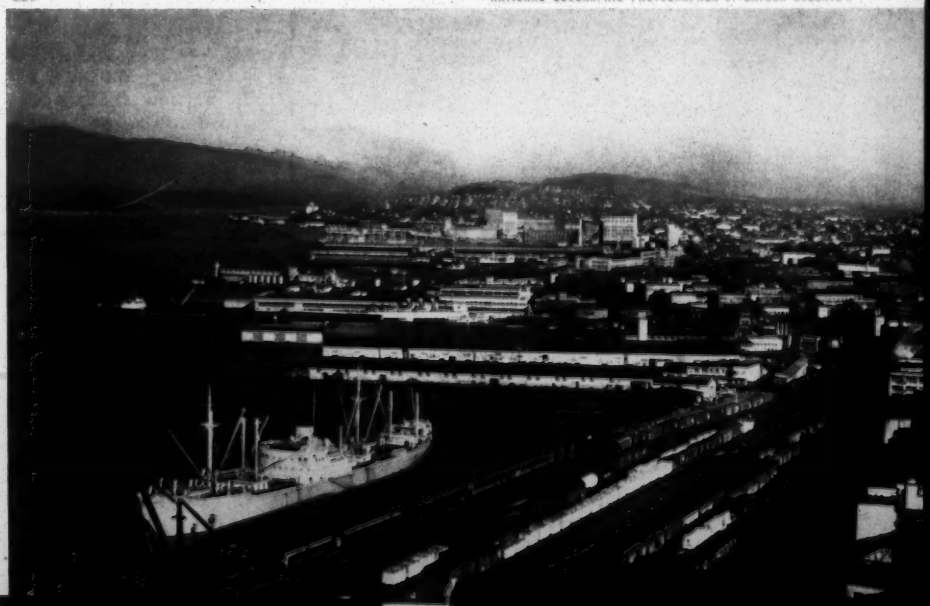
NGS MAP

Gold Rush days, lies at the northern tip of the Passage. He who bends an ear to the town's ghostly past will hear bearded miners storming to the nearest saloon to bang a poke of gold on the bar. Outside town, at infamous White Pass, he will picture the broken hopes of hundreds of eager but inexperienced would-be prospectors who never made it over the snow-filled cut to the Klondike gold fields.

The Inside Passage, whose protected channel was gouged out by glaciers, is rich not only in history but also in breath-taking scenery. Rugged Coast Mountains rise like a wall to the east. Rivers slice them; lakes jewel their valleys; fiords channel their foothills. Glaciers drape their shoulders and deep forests and flower-dappled banks spread at their feet. Regiments of spruce, hemlock, and cedar march silently down their flanks to the water's edge. Wild animals far outnumber humans along these shores.

With Ripple Rock sliced to give 40-foot clearance, freighters which formerly waited hours for the tide to change, can now move smoothly through Seymour Narrows. Ingots of aluminum from the giant new smelter at Kitimat (*National Geographic Magazine*, September, 1956) should hit the pier at Vancouver, below, hours ahead of the past schedule. A.P.M.

NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS



Inside Passage to Alaska

RALPH GRAY, NATIONAL GEOGRAPHIC STAFF

THIS summer's tourist, sailing smoothly northward along the winding, 1,000-mile-long "Inside Passage" that stretches from Seattle to Juneau, will find he can almost taste its early history. It was just off the main channel, near Bella Coola (above), that the Scottish explorer, Alexander Mackenzie, reached the Pacific—the first man to cross the continent north of Mexico. The year: 1793. A story on Mackenzie's track appears in the *National Geographic Magazine*, August, 1955.

Tragedy, too, has haunted the island-sheltered Passage. Last month Canadians blasted a submerged obstacle disarmingly known as Ripple Rock (see map). This hogback had sunk or damaged at least 24 large ships and some 100 smaller vessels, taking 114 lives during the last 75 years.

Cruise ships make up but a handful of the vessels that negotiate the Inside Passage. At Ketchikan, ocean-going trawlers hardly have their first line snugged up before squirming heaps of salmon and halibut pour on the piers.

North of Ketchikan, names like Petersburg, Baranof, and Wrangell echo the days when the Russian-American fur company and Hudson's Bay Company maintained a lively competition for the region's plentiful skins and pelts.

After a stop at steep-terraced Juneau, Alaska's capital city, the visitor gazes fascinated as the ship slips through rock-walled Lynn Canal (just off the top of the map). Skagway, a post-card town of

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NATIONAL GEOGRAPHIC PHOTOGRAPHER B. ANTHONY STEWART

READY ABOUT—HARD ALEE!

Eastern Youngsters Learn Ropes in Vest-Pocket Boats

"WELL, Skipper, what are your chances in the race?" You're talking to a nine-year-old. He's spending his summer vacation on water—say along the Atlantic coast between Norfolk, Virginia, and the eastern tip of Maine. And when he answers, you can be sure he knows what he's talking about. For these days, sailing starts early in the life of a boy or girl. Youngsters racing their nine-foot, eight-inch Turnabouts at Camden, Maine, above, know that the starboard tack gives them the right of way in a harbor race—just as they know the right time to bunt, back on the local sand lot. Changing from one tack to another, they shout the order, "Ready about, hard alee!" with authority.

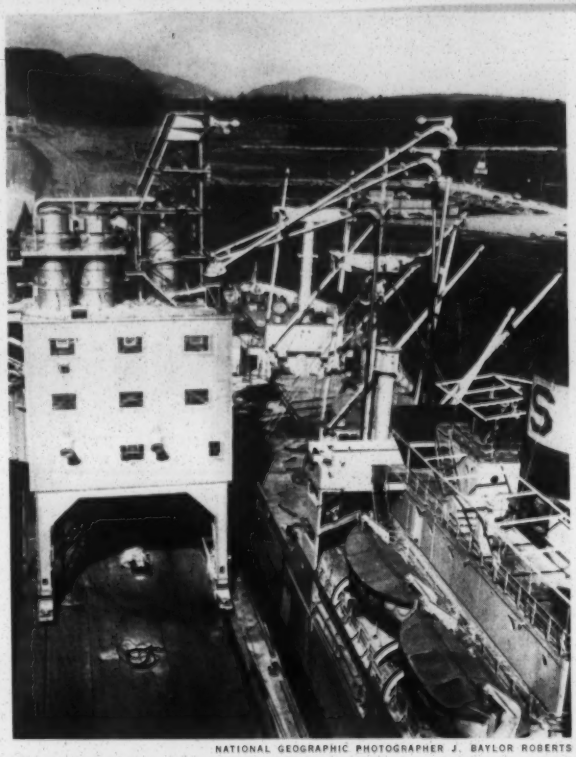
Children in coastal towns like Marblehead, Massachusetts, Fairfield, Connecticut, and along Chesapeake Bay shores find sheltered waters where they learn to sail and race specific classes of small boats—Penguins, Brutal Beasts, Snowbirds, Blue Jays, a host of others. Vessels are small, simple, usually inexpensive. When members of a class, 20 or 30 strong, race around a triangular course, the competition is as close and desperate as it will be in this summer's *America's* Cup Race between Britain and the United States.

Prices of the little vessels seldom bar youthful enthusiasts from tasting salt water. Some types can be bought in do-it-yourself kits. Certain schools along Long Island Sound make classroom projects out of building Blue Jays.

The pocket-sized yachts have simple rigging, generally carry only a mainsail, and sport a centerboard (for landlubbers, that's a retractable keel). With the centerboard pulled up, the boats may be tugged ashore onto the beach. If they capsize, they stay afloat and can often be righted in time to finish the race. Young tars are swaddled in life jackets.

Only drawback: by the time a boy is about 16, he's too big for his boat.

ALUMINUM, not gold, excites north-country miners today. Paradoxically, bauxite, from which aluminum is drawn, is not known in British Columbia. But water power is plentiful. Aluminum production requires power in steady, enormous quantities. To generate electricity Kitimat has put to work the world's largest underground power station. Tapping deep mountain reservoirs, it sends over the hills cheap 'juice.' Savings make it economically possible for the Aluminum Company of Canada to haul raw material fully 5,600 miles from Jamaica in ore ships like the "Sun Karen," right. An ingenious loading device here dips its pipes into the ship's hold, literally sucking the contents ashore.



NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS

NEAR the north end of the Passage, passengers see Alaska's capital, Juneau, cradled at the foot of Juneau Mountain, snow-flecked even in the late spring.

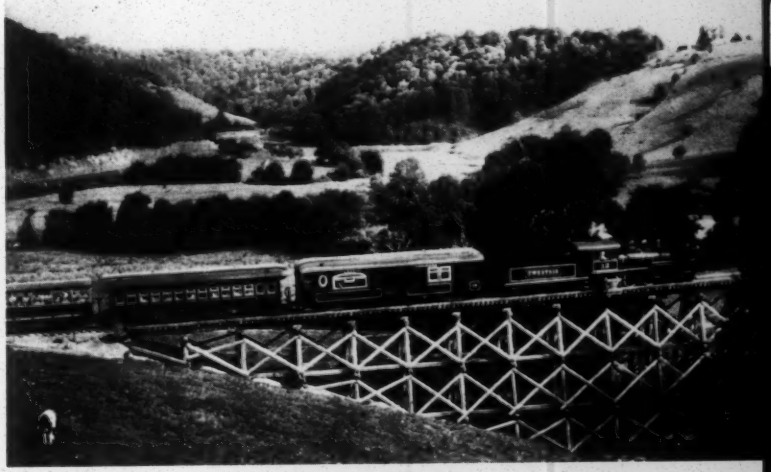
GILBERT GROSVENOR

Roan Mountain

TWO QUEENS, right, from Tennessee and North Carolina, reign over the Rhododendron Festival.

Visitors to near-by Blowing Rock, North Carolina, may go rolling around "Roundhouse Mountain" on *Tweetsie*, a narrow-gauge train out of the past that whistles its way along a one-mile run, below.

TRU-TONE (BELOW)



A Sea of Blossoms Crowns

School Bulletins Editor Ralph Gray Revisits This Jeweled Summit in the Southern Highlands

SIX miles of blossoming rhododendrons stretching through clouds. That's what it's like on top of Roan Mountain, beginning about the middle of June. Thousands of pilgrims will flock to its summit this year, to stroll through the shifting sea of purple and red flowers.

How different it was 28 years ago, when as a child, I first hiked up the then remote, little-known peak on the Tennessee-North Carolina border. Flower-capped Roan, rising in the land of Daniel Boone and Davy Crockett, became for me the symbol of the world's magic mountains.

Today cars can drive to the top in high gear. This was how I returned two years ago, with my own children, to view the blossoms of festival time [*National Geographic*, June, 1957].

Like Scotch heather, a relative plant, these gentle blooms thrive on wind-swept heights. The Roan rises 6,200 feet—one of the highest points in the Appalachians. The largest stand of *Rhododendron catawbiense* is found on the mountain's broad crown, where acres of flowers billow like ocean waves.

My family and I picked the most beautiful stand of rhododendron on the mountain for our camping spot (right). We had the Roan to ourselves after sundown and surrendered to its spell as chill night fog crept close, leaving us on a jeweled island in the clouds.—R. G.

PHOTOGRAPHS BY NATIONAL GEOGRAPHIC PHOTOGRAPHER ROBERT F. SISSON

NATIONAL MONUMENT is divided into six areas where spectacular examples of petrified trees have collected. Paved road leads visitors into five of these "forests." Children at right skip along a fallen tree trunk that dates from the Triassic Age, about 160 million years ago. In the Blue Mesa, below, a section of petrified tree balances on a pedestal of claylike soil. Ground eroded from under the log. Now it forms a cap, hindering further erosion.

PHOTOGRAPHS BY RALPH GRAY, NATIONAL GEOGRAPHIC STAFF

come straight from the desert sun itself.

Petrified wood rich with these locked-in colors is called agatized. I found that by sloshing canteen water over the butt of an agatized log lying in the desert, I could release the full depth of its colors. Yet the plain, buff-colored logs, whose cells had been replaced by the chemical silica alone, were more mysterious to me because they mimic so perfectly the texture of true wood. Still had I tried to whittle a piece, my knife would have dulled quickly. This "wood" is *really* as hard as a rock.

I learned one other thing about our national heritage of stone trees. If each visitor should pick up just one piece of petrified wood and lug it home for a souvenir, there would be no Petrified Forest left in a generation or two. It's a point worth remembering. E.P.

UMI

Southwest Wonder

Forest That Time Turned to Stone

ON A RECENT trip through the Southwest, Edwards Park of the School Bulletins staff joined thousands of other visitors (right) for a look at Petrified Forest. Here he describes what he saw. Administered by the National Park Service, Petrified Forest is pictured in an article on our National Parks in the May, 1958, *National Geographic*.

EDWARDS PARK, NATIONAL GEOGRAPHIC STAFF

YOU are driving through Arizona on U. S. Route 66. You come to a side road, marked by a United States Park Service sign. You swing off the highway, away from rumbling trucks and speeding station wagons, and nose into silent, bright-colored desert, where miniature buttes and mesas have been sculptured by eons of erosion. The last thing you expect to see in this weirdly carved badland is a tree. So when you pass a mighty tree trunk, toppled by the road, you pause in surprise to inspect it. At least you do if you're like me.

I got out of the car and walked over to the barkless, yellowed trunk, half shattered and apparently rotting. I picked up a sliver, expecting the spongy feel of old wood. The grain stood out; splinters protruded. Yet the wood was stone—heavy, brittle, dry.

Thus I made acquaintance with Petrified Forest, a 94,000-acre national monument that Congress may soon designate a national park. Abutting Route 66, the Southwest's "Main Street," Petrified Forest has been drawing more than half a million visitors in recent years. All share the astonishment I felt as I explored hundreds of crumpled stone logs, some glittering with rich colors, some forming bridges across eroded gullies, some hollow, some surrounded by scattered chips as though recently felled by an axman.

"The only things we don't have are standing trees," a park ranger told me. Actually, geologists think flood waters, millions of years ago, washed away these trees from distant forests, then stranded them here in a big log jam. Marshy sediment buried them for millenniums. Minerals worked their way into the wood cells, gradually replacing every grain, every splinter, every knot. When erosion laid the old trees bare, they were stone.

Various combinations of minerals give some of the logs their colors. I saw cross sections of petrified wood at the monument headquarters that had been polished and buffed so that all the hues of the Arizona climate seemed to glow in harmony —the deep reds of sunrise, the purple of a thunderstorm, the blue of desert sky, and flashes of orange that might have

JOHN E. FLETCHER, NATIONAL GEOGRAPHIC STAFF

AGRICULTURE settled down in Minnesota once lumbering cleared the land. Farms raise anything from corn to onions. At Hormel, a meat-packing center, beef is stamped with a marker containing grape juice, above. Minnesota's rich acres are usually contoured. The ribbon-like fields below grow varied crops near La Crescent.

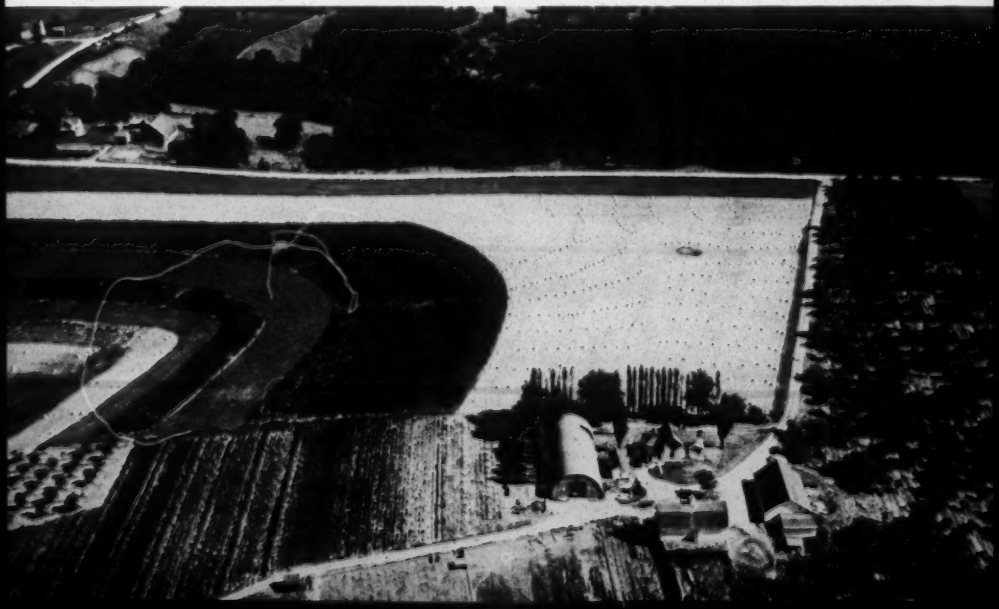
handled. Completion of the St. Lawrence Seaway next year will bring full-size ocean-going ships. Already Minnesota iron ore has provided steel and iron for skyscrapers, bridges, railroads, ships, and defense for the free world.

Lapping from horizon to horizon, the state's grain fields fill the great elevators that punctuate every farmland crossroad. Native grasses fatten the dairy herds that make 84,068-square-mile Minnesota a vast tub of butter.

People call this the North Star State. It reaches farther north than any other, thanks to hazy geographic knowledge of early treaty makers. Fashioning Minnesota's border with Canada's Manitoba, they gave the state its so-called Northwest Angle, a blob of land 26 miles north of the agreed boundary—the 49th parallel. Stamp collectors vie for the postmark of Penasse, Minnesota, northernmost American post office. It perches on the west side of Lake of the Woods, on a United States "island" surrounded on three sides by water, on one by Canadian soil.

Minnesota mothers the Father of Waters. The Mississippi, a meager 10 feet wide and two feet deep, emerges from Lake Itasca. Like a baby learning to walk, the stream starts in the wrong direction. It flows north for a spell before swing-

SCS PHOTO



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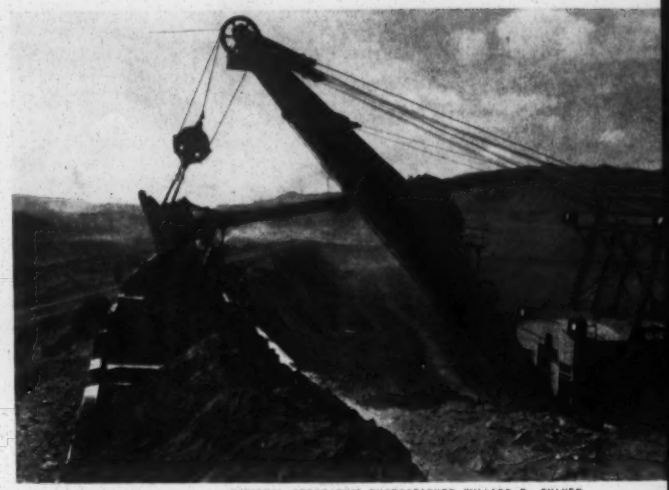

PAUL BUNYAN, Minnesota's mythical, superman logger, supposedly cut giant swaths in the state's virgin timber. Real-life counterpart, now that minerals are a major resource, lies in mighty-jawed mining machines. They gnaw into the ranges—Mesabi, Vermilion, and Cuyuna—that combine to make Minnesota earth's richest iron ore region. Electric shovel, right, takes a 30-ton bite at the world's largest open-pit iron ore mine, near town of Hibbing.

NATIONAL GEOGRAPHIC PHOTOGRAPHER WILLARD R. CULVER

MINNESOTA

Paul Bunyan Would Be Plenty Proud of Its First Century

JOHN E. FLETCHER, NATIONAL GEOGRAPHIC STAFF

MINNESOTA rounds out a century of statehood next Sunday. On its anniversary Americans may consider how different would be their Union without this, the 32nd state to enter it. For Minnesota has been a fountainhead of building materials and foodstuffs for the Nation.

The tracts of Norway and white pine that inspired the Bunyan legend wound up in the frame houses of Kansas City and other towns along the trails to the West. The mountains of rust-red iron ore, nearly three-fourths of all found in the United States, still fill nuzzling ore ships at Duluth's long docks, right. Vessels sail some 2,300 miles up the St. Lawrence River and through the Great Lakes to make Duluth-Superior the Nation's second largest port after New York in the amount of cargo

NATIONAL GEOGRAPHIC PHOTOGRAPHER J. BAYLOR ROBERTS

Minnesotans Can Thank Glaciers for Their 'Ten Thousand Lakes'

ing around to fence the lower section of the Minnesota-Wisconsin boundary and begin its trip to the Gulf of Mexico.

"Land of Ten Thousand Lakes" is another name for Minnesota. Actually, more than 11,000 lakes were dimpled here by ice age glaciers. Along with the streams that link many of them, they submerge about a fourteenth of the state's area. Lake Superior, largest of earth's fresh water lakes, washes against Minnesota's northeast shoulder. Lofty Split Rock Light beams its powerful eye, warning against reefs along a shore where metallic rocks throw magnetic compass needles several degrees askew.

Minnesota water drains in three directions. Lake Superior empties through the other Great Lakes into the Atlantic-bound St. Lawrence. Red River of the North, forming the state's boundary with North Dakota, aims for Lake Winnipeg. Like a train on a different track, it passes the Mississippi. The latter rolls south to split Minneapolis from its twin, St. Paul, the capital.

Giant mills make Minneapolis the "Flour City." An endless parade of livestock maintains St. Paul's enormous meat-packing plants. In these Twin Cities live about a third of the state's more than 3,000,000 people. Most are tall, blue-eyed, and blond, bearing the stamp of swarming Scandinavian settlers.

Minnesotans share pride in their state's 100 years. They can rightly boast of the Minneapolis Symphony Orchestra and the Mayo Clinic. They can marvel at their inland shipping and their wild vacation land that, like Insula Lake, above, can sometimes be reached only by plane. New England's Henry Wadsworth Longfellow did a remarkable press-agenting job for out-of-doors Minnesota when he wrote Hiawatha. Thousands still flock to the scene of the ballad. Though Minnehaha Falls gushes in a Minneapolis park, there are plenty of Hiawathalike sights in the lake-sodden north.

Beaver were once so plentiful that their skins served as money. But that was in the days when the land was young; when Paul Bunyan cruised it with his blue ox, Babe, and invented the aurora borealis to light the Minnesota woods at night for his tireless axmen. S.H.